



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : C09J 7/02	A1	(11) International Publication Number: WO 92/11333 (43) International Publication Date: 9 July 1992 (09.07.92)
<p>(21) International Application Number: PCT/US91/09472</p> <p>(22) International Filing Date: 16 December 1991 (16.12.91)</p> <p>(30) Priority data: 632,173 20 December 1990 (20.12.90) US</p> <p>(71) Applicant: MINNESOTA MINING AND MANUFACTURING COMPANY [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).</p> <p>(72) Inventors: KRECKEL, Karl, W. ; Hansastrasse 9, D-4040 Neuss 1 (DE). HAGER, Patrick, J. ; RICKERT, James, H. ; Post Office Box 33427, Saint Paul, MN 55133-3427 (US).</p>	<p>(74) Agents: WEINSTEIN, David, L. et al.; Post Office Box 33427, Saint Paul, MT 55133-3427 (US).</p> <p>(81) Designated States: AT (European patent), AU, BE (European patent), BR, CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, KR, LU (European patent), MC (European patent), NL (European patent), SE (European patent).</p> <p>Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>	
<p>(54) Title: REMOVABLE ADHESIVE TAPE</p> <div data-bbox="462 1155 1372 1501"> </div> <p>(57) Abstract</p> <p>The present invention relates to adhesive tapes, more particularly to tapes that can be firmly adhered to a substrate and can be removed without damaging the substrate. Adhesives formulated to provide a substantial level of adhesion, e.g., greater than 30 oz./in. adhesion to paper, are generally difficult to remove without damaging the substrate. Easily removable tapes of the prior art are highly elastic and exhibit large recoil when the stretching force is removed, in the same way a rubber band snaps back upon removal of the stretching force. This recoil characteristic can be dangerous, and increases the force required to debond these tapes at low angles. Finally, these highly elastic tapes tend to substantially recover their original shape when the stretching force is removed, and they are therefore not useful for indication of tampering or for guaranteeing single uses for hygienic purposes. This invention provides removable adhesive tape comprising a highly extensible and substantially inelastic backing and a layer of pressure-sensitive adhesive. The backing has a high tensile strength, has a lengthwise elongation at break of at least about 150 % with less than about 50 % elastic recovery after stretching. The adhesive can be a normally tacky and pressure-sensitive adhesive and is coated on at least one surface of the film backing. The adhesive is preferably highly extensible, does not separate from the backing during stretching, and has higher cohesion than adhesion to any suitable substrate. After being applied to a substrate, the adhesive tape of the present invention becomes firmly bonded, but can be easily removed without damaging the substrate by simply stretching it in a direction substantially parallel, i.e., less than about 35°, to the surface of the substrate.</p>		